

DOCKET NO.: PUAM-0258

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In Re Application of:**

**Daniel Kahne, et al.**

**Application No.: 10/676,391**

**Filing Date: October 1, 2003**

**For: GLYCOPEPTIDE ANTIBIOTICS, COMBINATORIAL LIBRARIES OF  
GLYCOPEPTIDE ANTIBIOTICS AND METHODS OF PRODUCING SAME**

**Confirmation No.: Not Yet Assigned**

**Group Art Unit: Not Yet Assigned**

**Examiner: Not Yet Assigned**

DATE OF DEPOSIT:

*November 21, 2003*

I HEREBY CERTIFY THAT THIS PAPER IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL, POSTAGE PREPAID, ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO THE UNITED STATES PATENT AND TRADEMARK OFFICE, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450.

*Elizabeth A. McLoud*

TYPED NAME: Elizabeth A. McLoud

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INFORMATION DISCLOSURE STATEMENT**

Pursuant to 37 CFR § 1.56 and in accordance with 37 CFR §§ 1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 CFR § 1.56(b).



In accordance with § 1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of

the above identified application as set forth in § 1.491, before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of request for continued examination under § 1.114, no additional fee is required.

- ☐ In accordance with § 1.129(a), this Information Disclosure Statement is being filed in connection with ☐ the first or ☐ second After Final Submission, therefore:

☐ Certification in Accordance with § 1.97(e) is attached; or

☐ The fee of **\$180.00** as set forth in § 1.17(p) is attached.

- ☐ In accordance with § 1.97(c), this Information Disclosure Statement is being filed after the period set forth in § 1.97(b) above but before the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311, or before an action that otherwise closes prosecution in the application, therefore:

☐ Certification in Accordance with § 1.97(e) is attached;

or

☐ The fee of **\$180.00** as set forth in § 1.17(p) is attached.

- ☐ In accordance with § 1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311 but before, or simultaneously with, the payment of the Issue Fee, therefore included are: Certification in Accordance with § 1.97(e); and the submission fee of **\$180.00** as set forth in § 1.17(p).

- ☐ Copies of each of the references listed on the attached Form PTO-1449 are enclosed herewith.

- ☒ Copies of references listed on the attached Form PTO-1449 are enclosed herewith
- ☒ Copies of references listed on the attached Form PTO 1449 are not required to be submitted pursuant to the June 30, 2003 recent revisions to 37 CFR § 1.98(a)(2)(i).

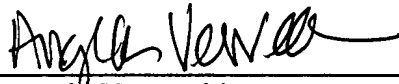
## EXCEPT THAT:

- ☒ In view of the voluminous nature of reference number 27, and the likelihood that this reference is available to the Examiner, a copy is not enclosed herewith.
- ☒ In accordance with § 1.98(d), copies of the following references listed on the attached Form PTO-1449 are not enclosed herewith because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application(s) for which a claim for priority under 35 U.S.C. § 120 have been made in the instant application:
  - ☒ Copies of references **1-44 and 62-68** listed on the attached Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in prior Application No. **09/353,368**, filed **July 14, 1999**.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050. This form is submitted in duplicate.

- ☐ The relevance of those listed references which are not in the English language is as follows:
- ☒ There are no listed references which are not in the English language.

Date: 11/21/03

  
\_\_\_\_\_  
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<b>Form PTO-1449 Modified</b>  List of Patent and Publications Cited by Applicant (Use several sheets if necessary)  U.S. Department of Commerce Patent and Trademark Office		Docket No. PUAM-0258	Application No. 10/676,391
		Applicant Daniel Kahne, et al.	
		Filing Date October 1, 2003	Group Not Yet Assigned
		Confirmation No. Not Yet Assigned	
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
	1	Allen, M., et al., "The role of hydrophobic side chains as determinants of antibacterial activity of semisynthetic glycopeptide antibiotics," <i>J. Antibiot.</i> , <b>1997</b> , 50, 677-684	
	2	Beauregard, D., et al., "Dimerization and membrane anchors in extracellular targeting of vancomycin group antibiotics," <i>Antimicrob. Agents &amp; Chemo.</i> , <b>1995</b> , 39, 781-785	
	3	Betaneli, V.I., et al., "A convenient synthesis of 1,2-O-ethylidene derivatives of carbohydrates," <i>Carbohydrate Res.</i> , <b>1982</b> , 107, 285-291	
	4	Blaakmeer, J., et al., <i>Int. J. Peptide Protein Res.</i> , <b>1991</b> , 27, 556-564	
	5	Cohen, M., "Epidemiology of drug resistance: implications for a post-antimicrobial era," <i>Science</i> , August 21, <b>1992</b> , 257, 1050-1055	
	6	Cooper, R., et al., "Chapter 14, Simisynthetic glycopeptide antibiotics," in <i>Ann. Rept. In Med. Chem.</i> , <b>1996</b> , 31, 131-140	
	7	Damour, O., et al., "Cytotoxicity evaluation of antiseptics and antibiotics on cultured human fibroblasts and keratinocytes," <i>Burns</i> , <b>1992</b> , 18, 479-485	
	8	Dick, W.E., <i>Carbohydr. Res.</i> , <b>1972</b> , 21, 255-268	
	9	Felmingham, D., "Towards the ideal glycopeptide," <i>J. Antimicrob. Chemother.</i> , <b>1993</b> , 32, 663-666	
	10	Gallop, M.A., et al., "Applications of combinatorial technologies to drug discovery 1. Background and peptide combinatorial libraries," <i>J. Med. Chem.</i> , <b>1994</b> , 37, 1233-1251	
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	11	Gerhard, U., et al., "The role of the sugar and chlorine substituents in the dimerization of vancomycin antibiotics," <i>JACS</i> , <b>1993</b> , <i>115</i> , 232-237	
	12	Gordon, E.M., et al., "Applications of combinatorial technologies to drug discovery. 2. Combinatorial organic synthesis, library screening strategies, and future directions," <i>J. Med. Chem.</i> , <b>1994</b> , <i>37</i> , 1385-1401	
	13	Kannan, R., et al., "Function of the amino sugar and N-terminal amino acid of the antibiotic vancomycin in its complexation with cell wall peptides," <i>JACS</i> , <b>1988</b> , <i>110</i> , 2946-2953	
	14	Kusumoto, S., et al., <i>Bull. Chem. Soc. Jpn.</i> , <b>1986</b> , <i>59</i> , 1289-1298	
	15	Link, P.A.J., et al., <i>J. Heterocyclic Chem.</i> , <b>1985</b> , <i>22</i> , 873-878	
	16	Loll, P., et al., "Simultaneous recognition of a carboxylate-containing ligand and an intramolecular surrogate ligand in the crystal structure of an asymmetric vancomycin dimer," <i>JACS</i> , <b>1997</b> , <i>119</i> , 1516-1522	
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	19	Malabarba, A., et al., "Structural modifications of glycopeptide antibiotics," <i>Med. Res. Rev.</i> , <b>1997</b> , <i>17(1)</i> , 69-137	
	20	Mercier, R.-C., et al., "Pharmacodynamic evaluation of a new glycopeptide, LY333328, and in vitro activity against staphylococcus aureus and Enterococcus faecium," <i>Antimicrob. Agents Chemother.</i> , <b>1997</b> , 1307-1312	
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	21	Mikami, Y., et al., "Comparison of in vitro antifungal activity of itraconazole and hydroxyl-itraconazole by colorimetric MTT assay," <i>MYCOSES</i> , 1994, 37, 27-33	
	22	Milewski, W.M., et al., "Overproduction of a 37-kilodalton cytoplasmic protein homologous to NAD <sup>+</sup> -linked D-lactate dehydrogenase associated with vancomycin resistance in staphylococcus aureus," <i>Antimicrobial Agents and Chemotherapy</i> , 1996, 40, 166-172	
	23	Mosmann, T., "Rapid colorimetric assay for cellular growth and survival; application to proliferation and cytotoxicity assays," <i>J. Immunol. Methods</i> , 1983, 65, 55-63	
	24	Nagarajan, R., et al., "Selective cleavage of vancosamine, glucose, and N-methyl-leucine from vancomycin and related antibiotics," <i>J. Chem. Soc. Chem. Comm.</i> , 1988, 1306-1307	
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*	27	National Committee for Clinical Laboratory (NCCL) Standard, "Methods for dilution antimicrobial susceptibility tests for bacteria that grow aerobically-third edition; approved standard," <i>NCCLS Document M7-A3</i> , National Committee for Clinical Laboratory Standard, Villanova, PA, 1993	
	28	Neu, H., "The crisis in antibiotic resistance," <i>Science</i> , August 21, 1992, 257, 1064-1073	
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	30	Pavlov, A., et al., "Synthesis and biological activity of derivatives of glycopeptide antibiotics eremomycin and vancomycin nitrosated, acylated or carbamoylated at the N-terminal," <i>J. Antibiot.</i> , 1993, 46, 1731-1739	
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\* A copy of this reference will not be forwarded to the U.S. Patent and Trademark Office since it is believed to be too voluminous and easily obtainable by the Examiner.



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	31	Pearce, C., et al., "Complete assignment of the <sup>13</sup> C NMR spectrum of vancomycin," <i>J. Chem. Soc. Perkin Trans.</i> , <b>1995</b> , 2, 153-157	
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	33	Rodriquez, M. J., "Novel Glycopeptide Antibiotics: N-Alkylated Derivatives Active Against Vancomycin-Resistant Enterococci," <i>J. Antibiotics</i> , <b>June 1998</b> , 51(6), 560-569	
	34	Solenberg, P.J., et al., "Production of hybrid glycopeptide antibiotics in vitro and in streptomyces toyocaensis," <i>Chem. Biol.</i> , <b>1997</b> , 4, 195-202	
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	37	Walsh, C., "Vancomycin Resistance: decoding the molecular logic," <i>Science</i> , July 16, <b>1993</b> , 261, 308-309	
	38	Webb, et al., <i>Tetrahedron</i> , <b>1998</b> , 54, 401-410	
	39	Westwall, et al., <i>J. Antibiotics</i> , <b>1995</b> , 48, 1292	
	40	Williams, D., et al., "Toward an estimation of binding constants in aqueous solution: studies of associations of vancomycin group antibiotics," <i>PNAS USA</i> , <b>1993</b> , 90, 1172-1178	
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	41	Williams, D., et al., "Molecular basis of the activity of antibiotics of the vancomycin group," <i>Biochem. Pharm.</i> , <b>1988</b> , 37, 133-141	
	42	Williams, D.H., et al., "An analysis of the origins of a cooperative binding energy of dimerization," <i>Science</i> , <b>1998</b> , 280, 711-714	
	43	Yan, L., et al., "Glycosylation on the Merrifield resin using anomeric sulfoxides," <i>JACS</i> , <b>1994</b> , 116, 6953-6954	
	44	Zelenitsky, S., et al., "Time-kill curves for a semisynthetic glycopeptide, LY333328, against vancomycin-susceptible and vancomycin-resistant <i>Enterococcus faecium</i> strains," <i>Antimicrob. Agents Chemother.</i> , <b>1997</b> , 41, 1407-1408	
	45	Ge, M., et al., "Reconstruction of vancomycin by chemical glycosylation of the pseudoaglycon," <i>JACS</i> , <b>1998</b> , 120, 11014-11015	
	46	Terrett, N.K., "Combinatorial Chemistry," <i>Oxford Univ. Press</i> , <b>1998</b> , 97-102	
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	48	Westwell, M.S., et al., "Two conformers of the glycopeptide antibiotic teicoplanin with distinct ligand binding sites," <i>J. of Antibiotics</i> , November <b>1995</b> , 1292-1298	
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<b>U. S. PATENT DOCUMENTS</b>							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
	49	5,602,229	02/11/97	Malabarba, et al.	530	317	
	50	5,668,272	09/16/97	Prasad, et al.	536	55.3	
	51	5,684,127	11/04/97	Malabarba, et al.	530	317	
	52	5,750,509	05/12/98	Malabarba, et al.	514	11	
	53	5,795,958	08/18/98	Rao, et al.	530	331	
	54	5,837,862	11/17/98	Wong, et al.	536	53	
	55	5,843,889	12/01/98	Cooper, et al.	514	8	
	56	6,498,238	12/24/02	Kim, et al.	536	16.8	
	57	09/840,927	04/25/01	Kim, et al.			
	58	5,861,492	01/1999	Kahne	36	4.1	
	59	6,388,059	05/2002	Kahne, et al.	536	18.6	
	60	6,518,243	02/2003	Kahne, et al.	514	8	
	61	20020045574 A1	04/18/02	Kim, et al.	514	8	
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**U. S. PATENT DOCUMENTS**

Examiner Initial	Document No.	Date	Name	Class	Subclass

**FOREIGN PATENT DOCUMENTS**

Examiner Initial	Document No.	Date	Country	Translation	
				YES	NO
	62 WO 00/04044 A1	01/27/00	PCT		
	63 WO 00/42067 A1	07/20/00	PCT		
	64 WO 00/69893 A1	11/23/00	PCT		
	65 WO 01/81373 A2	11/01/01	PCT		
	66 0 802 199 A2	10/22/97	EPO		
	67 0 802 199 A3	11/05/97	EPO		
	68 0 881 229 A2	12/02/98	EPO		

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